

# Air Education and Training Command

## Mobile Learning

Advanced Learning Technology Demonstration

Gina Johnson, Training Technology Manager

21 May 2010



U.S. AIR FORCE



82D TRAINING WING

SHEPPARD AFB, TEXAS



# Overview

- Background/Significance of Demonstration
- Purpose of Demonstration
- Theoretical Framework
- Limitations
- Literature Review
- Methodology
- Quantitative Findings as of 10 May
- Initial and End-of-Course Qualitative Findings



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Background/Significance of the Demonstration

- Mission of AETC – develop America's Airman today ... for tomorrow
- Primary challenge – bridging generation gap between instructors from baby boomer generation and recruits from the millennial generation
- AETC leadership encourages implementation of new technologies in training environment



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Background/Significance of the Demonstration

- Most military technical training is traditional stand-up lecture/discussion
- AETC has not established a standard mobile digital device to be used for technical training



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Purpose of the Study

- To compare three mobile devices to determine which is most compatible with military training requirements
- Recommendation will be made to AETC as to which device shows the greatest learning improvements and which device is most preferred and sustainable



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Theoretical Framework

- Three Teams involved in demonstration
  - Technical team
    - Market Research
    - Select devices/load course materials on devices
  - Research Team
    - Conduct research/compile results
  - Course Integration Team
    - Administer Surveys
    - Conduct Training



82D TRAINING WING



SHEPPARD AFB, TEXAS





# Theoretical Framework

- Quasi-experimental design
  - Group #1 – use iPod Touch
  - Group #2 – Use Touch Phone Pro
  - Group #3 – Use Netbook
  - Group #4 – Control Group
- Courseware loaded on devices
- Devices used as supplementary study tool



82D TRAINING WING



SHEPPARD AFB, TEXAS







# Theoretical Framework

- Quantitative data collected from block test scores
- Qualitative data collected from surveys given to instructors and students
- Qualitative interviews with instructors and student conducted by AETC Studies and Analysis Squadron at the end of course



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Limitations

- Difference between different instructors' teaching techniques
- Instructor bias toward using mobile devices
- Students' skills with technology
- No Internet connectivity permitted



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Literature Review

- Generational Differences
  - Baby Boomers – learning style tactile/kinesthetic, prefer hands-on activities
  - Generation X – need structured environment; need to know parameters and step-by-step sequencing
  - Millennials – goal and education oriented; learn by doing; multitask with multiple media simultaneously



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Methodology

- Population – Air Force personnel attending AFSC-awarding 2A632 Aerospace Ground Equipment (AGE) Apprentice Course
- 4125 Airmen in AGE career field
- 300 students attend AGE Apprentice Course each year



82D TRAINING WING



SHEPPARD AFB, TEXAS





# Methodology

- Sample – 16 classes of the AGE Apprentice Course between January and May 2010
- Restricted to first 7 blocks of instruction (33 training days)
- Blocks I – IV primarily knowledge-based
- Blocks V – VII introduces skill-based tasks



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Methodology

- Quantitative Instrument: Block Tests
- Test scores from seven blocks
  - Baseline of 6 months prior to study
  - Scores of groups using mobile device compared to scores of control group



82D TRAINING WING



SHEPPARD AFB, TEXAS



# Methodology

- Qualitative Instrument: Student and Instructor Surveys
  - Pre-use Survey – Students & Instructors
  - Mid-term Survey – Students only
  - Post-use Survey – Students & Instructors



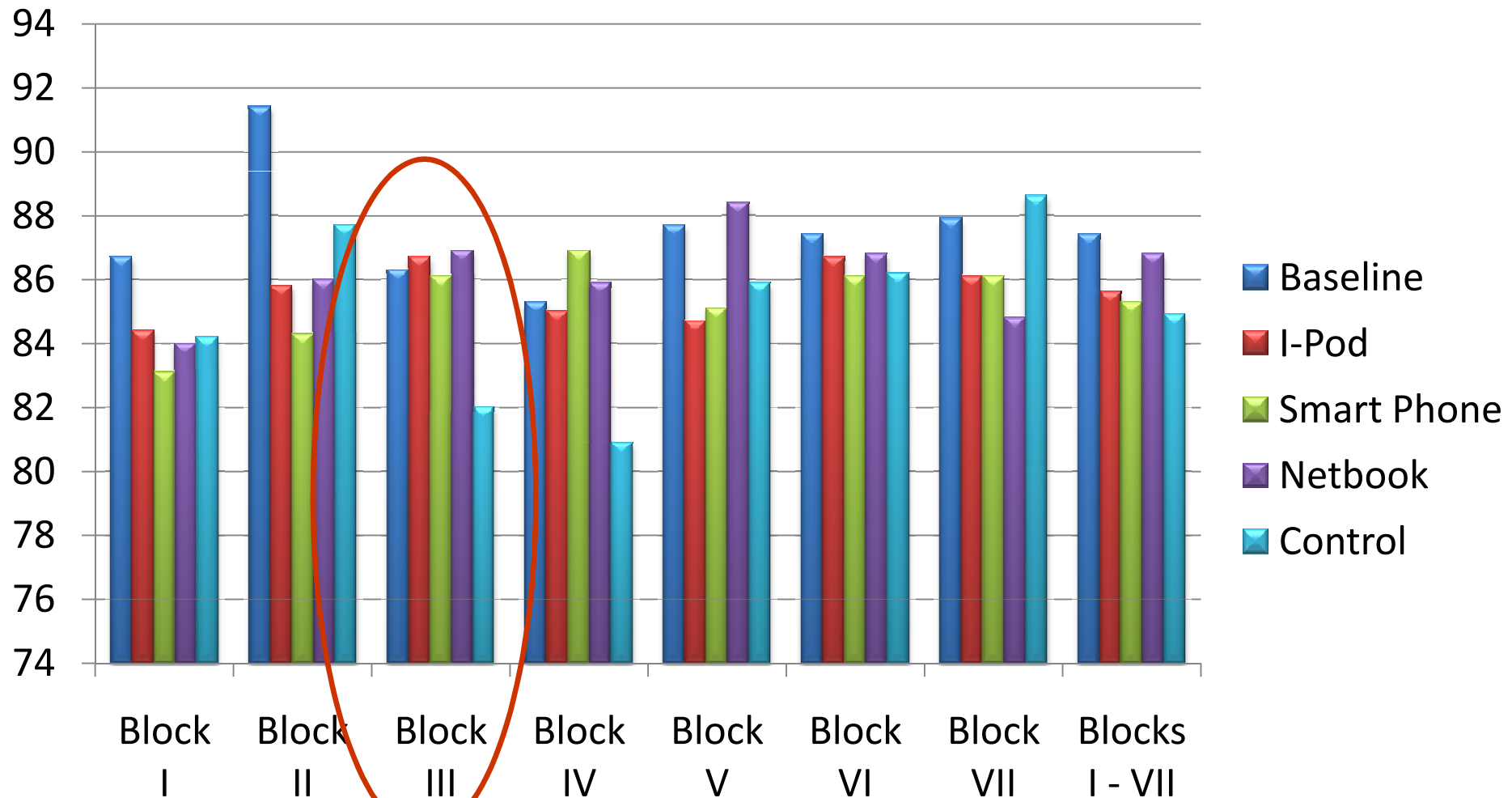
82D TRAINING WING



SHEPPARD AFB, TEXAS



# Average Scores



82D TRAINING WING



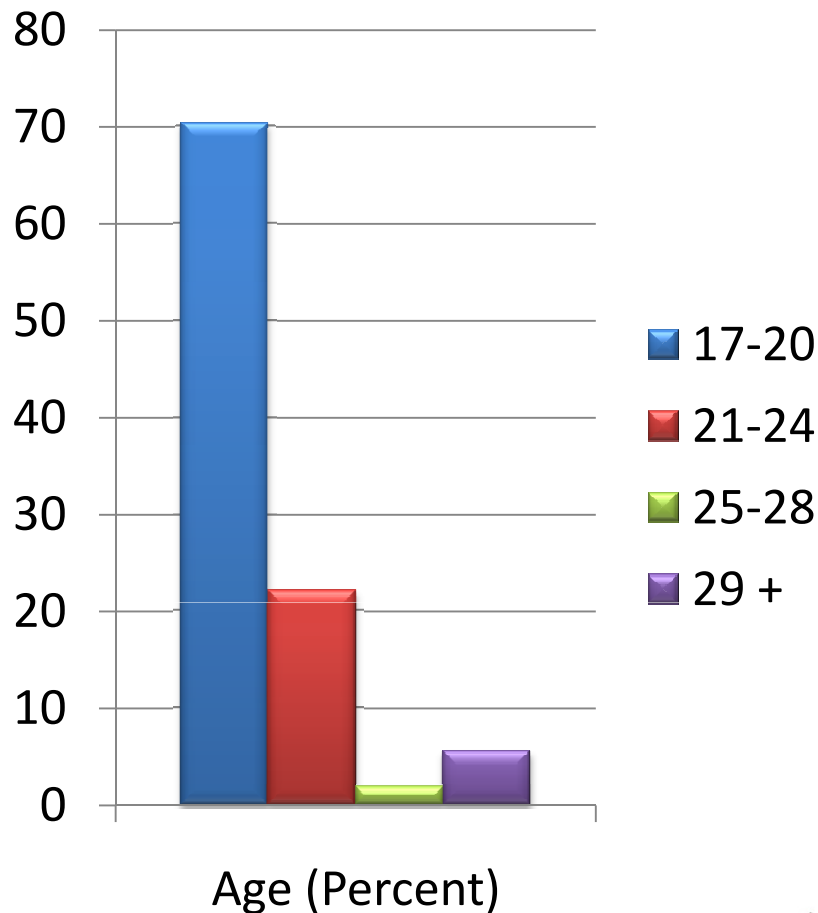
SHEPPARD AFB, TEXAS



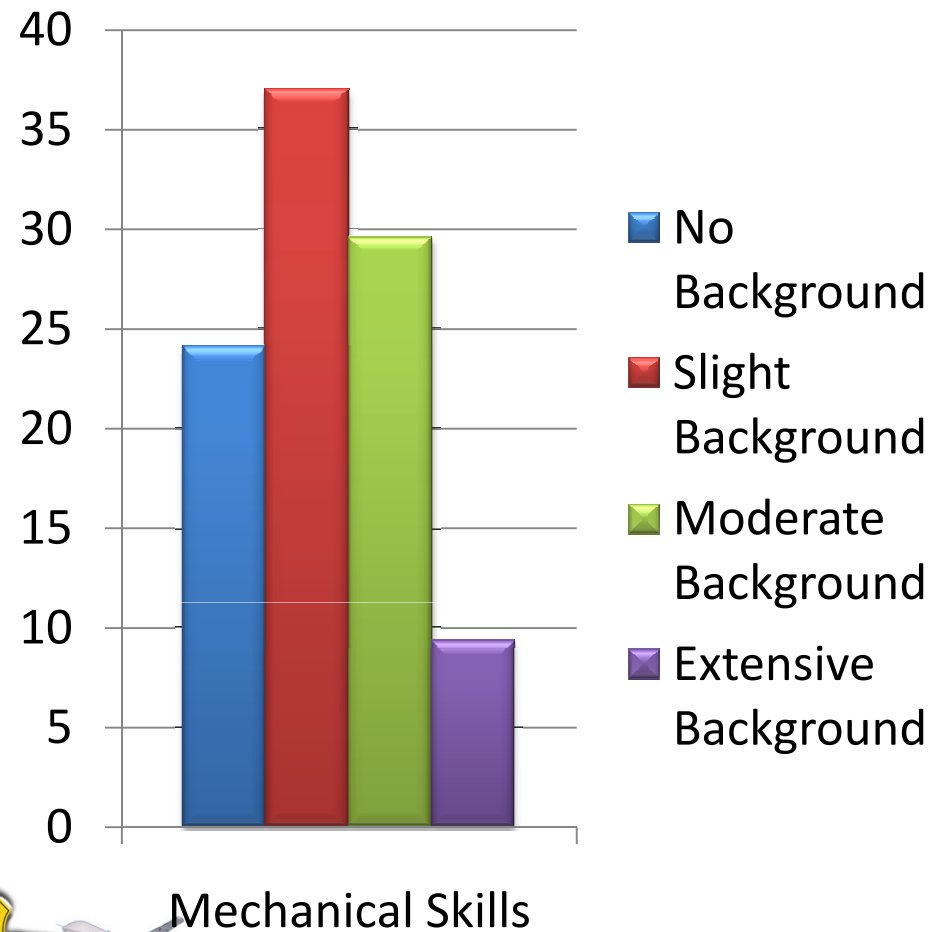


# Student Pre-Use Survey

What is your age range?



How would you rate your mechanical background prior to joining the AF?



82D TRAINING WING

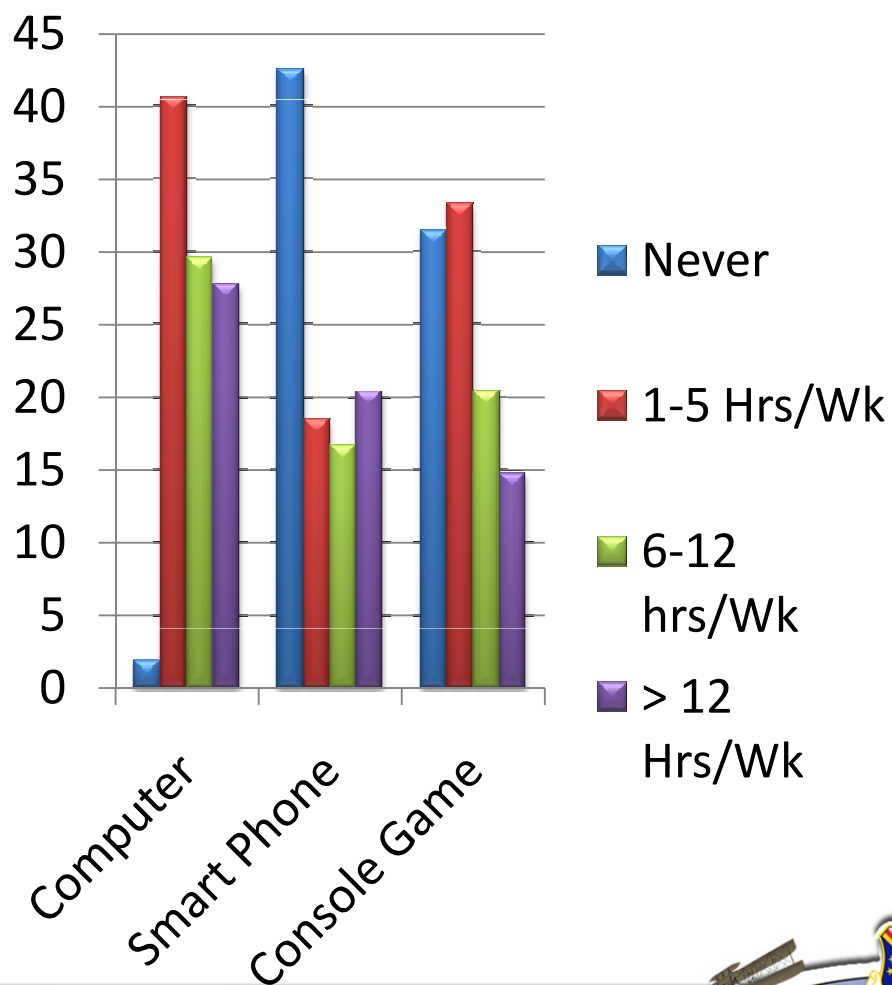


SHEPPARD AFB, TEXAS

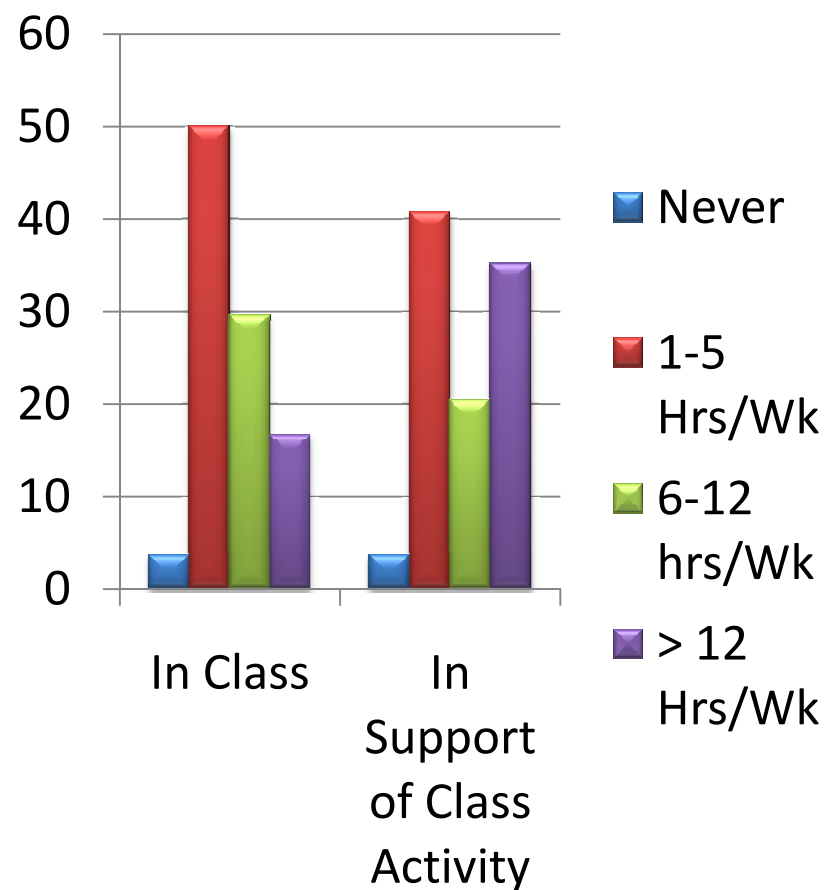


# Student Pre-Use Survey

How frequently do you  
use:



How frequently have you  
used computers:



82D TRAINING WING

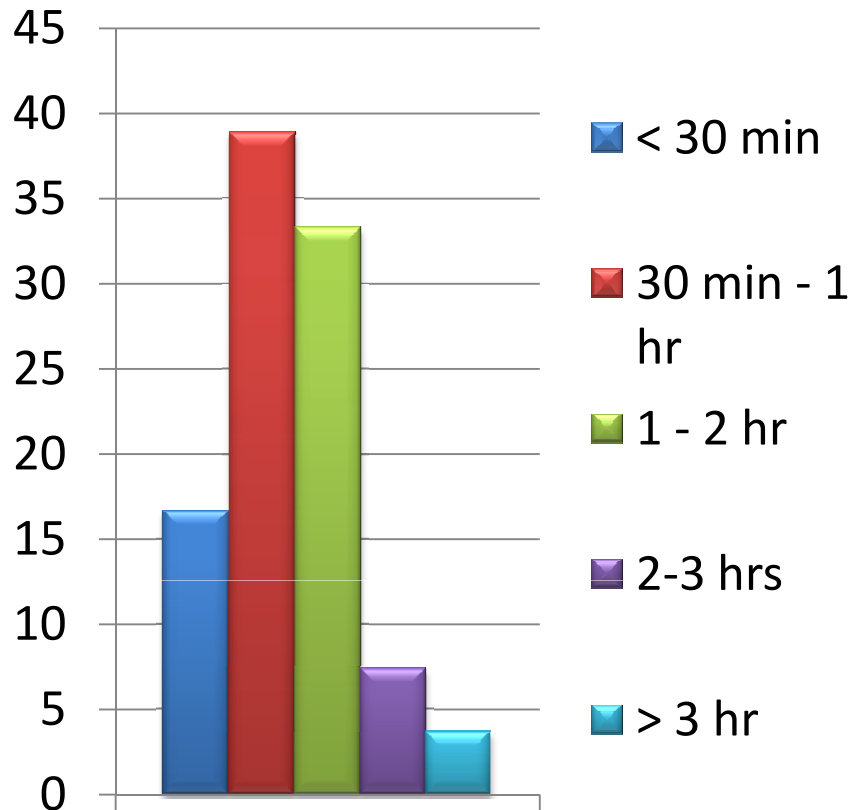


SHEPPARD AFB, TEXAS



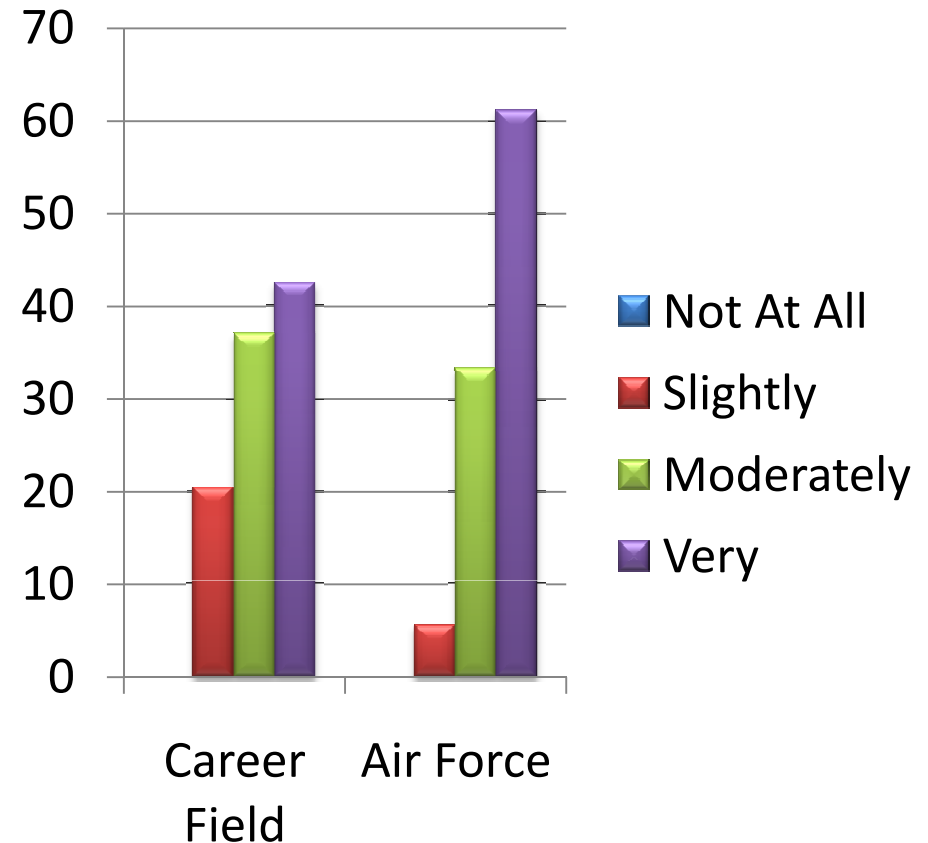
# Student Pre-Use Survey

How much time did you spend in study daily prior to joining the AF?



Daily Study Time

What is your satisfaction rate with:



82D TRAINING WING



SHEPPARD AFB, TEXAS



# End-of-Course Qualitative Findings

- iPod Touch
- HTC Touch Pro
- Netbooks
- Control Group



82D TRAINING WING



SHEPPARD AFB, TEXAS





# Questions

[Gina.johnson@sheppard.af.mil](mailto:Gina.johnson@sheppard.af.mil)

940-676-5884



82D TRAINING WING



SHEPPARD AFB, TEXAS

